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SOUTH AUSTRALIA

ANNUAL REPORT

OF

THE DEPARTMENT OF PUBLIC HEALTH

AND

THE CENTRAL BOARD OF HEALTH

FOR THE

YEAR ENDED 31st DECEMBER, 1953

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THE PUBLIC HEALTH

Annual Report of the Department of Public Health and the Central Board of Health to the Minister of Health (Hon. Sir Alexander Lyell McEwin, M.L.C.)

Sir—We have the honour to submit to you this report for the year ending 31st December, 1953. The report is arranged in sections—

1. Staff and administration.
2. Legislation.
3. Vital statistics.
4. Infectious diseases.
5. Poliomyelitis.
6. Tuberculosis.
7. School medical services.
8. General sanitation.
9. Food and drugs.
10. Industrial hygiene.
11. Summary and comments.

The section on vital statistics has been compiled by the Government Statist (Mr. A. W. Bowden) and his staff.

Other sections have been prepared by officers of the Department of Public Health. The Director of Tuberculosis, (Dr. P. S. Woodruff), was responsible for section 6. The Principal Medical Officer for Schools, (Dr. W. Christie), supplied section 7. Dr. R. J. Sargent prepared the section on poliomyelitis.

Dr. G. H. McQueen, Senior Medical Officer, has supervised the collection of the data for the report. He has been assisted by the Secretary, (Mr. H. T. Hutchins) and his staff in the general work of the report.

1. STAFF AND ADMINISTRATION.

Personnel of the Board.—During the year the constitution of the Board was :—

Chairman—Albert Ray Southwood, M.D.
Members appointed by the Governor—
  John Burton Cleland, M.D.
  George Hugh McQueen, M.B.B.S.
Member elected by the metropolitan local boards—
  Arthur Roy Burnell, J.P., re-elected February, 1953.
Member elected by other local boards—
  Alfred Bertram Cox, J.P., re-elected February, 1953.
Secretary—Hedley Thomas Hutchins.

Mr. A. B. Cox was granted leave from the Board on 18th October for six months to travel overseas.

In May, Dr. P. S. Woodruff, Director of Tuberculosis, was awarded a Wunderly Travelling Fellowship by the Royal Australasian College of Physicians. The Government granted Dr. Woodruff six months' leave. He attended several conferences on tuberculosis, visiting Britain, France, and the Scandinavian countries.

Dr. J. S. Heitmann was appointed as a medical officer in the Department on 27th January. He was placed in charge of the Female Investigation Clinic at the Royal Adelaide Hospital and the Mantoux testing and B.C.G. vaccination work of the department.

Dr. I. A. O. Campbell was appointed as a part-time medical officer in the School Medical Services on 13th March. She resigned on 20th July and her place was taken by Dr. E. Mussared.

Messrs. J. F. Irwin and J. C. Sampson, temporary dentists in the School Medical Services resigned on 27th February and 24th December respectively.

Mr. L. Pryor was appointed an inspector under the Health and Food Drugs Acts with the Department on 23rd March.

Mr. W. G. Bruce, X-ray technician resigned on 20th January. He had been in charge of the X-ray darkroom since the beginning of the Department's X-ray Health Survey. His work was always of the highest quality and he helped to establish the reputation of the South Australian X-ray Health Survey for films of a very high technical standard.

Mr. R. B. de Hoghton was appointed as a radiographer in August. Mr. V. Russell, X-ray survey officer was transferred to the Agriculture Department in April and Mr. M. J. Durant of the clerical staff took his position.

Visit of Sir Allen Daley.—The visit of Sir Allen Daley marked a peak in public health history in South Australia. After a brilliant and influential career as Medical Officer of Health and School Medical Officer of the London County Council, and a year as Associate Health Officer to the city of Baltimore, U.S.A., he came to us with the latest in public health work from both Europe and America. In addition to a great number of interviews with heads of departments and officers in charge of various institutions, he spoke at many large meetings. At a civic reception given him by the Lord

Mayor of Adelaide (Sir Arthur Rymill), Sir Allen gave a talk on public health work in relation to local government with special reference to his work in the London County Council. Sir Allen addressed medical students on " London Hospitals in the Blitz " and at a post-graduate lecture attended by about 60 medical men, he discussed medical practice under the title of " Medical Organization—Past, Present and Future ".

Sir Allen and Lady Daley visited the headquarters of the Mothers and Babies' Health Association, on North Terrace, and the Mothercraft section at Torrens House, South Terrace. Sir Allen also attended meetings of the Advisory Council on Health and Medical Services and of the Central Board of Health. Dr. J. W. Rollison, Director-General of Medical Services, accompanied him on visits to medical institutions.

When Sir Allen gave his address on " World Aspects of Public Health ", at the Conference of Medical Officers of Health, there were about 90 men present. He also spent an interesting day in the Adelaide hills area and discussed public health affairs with the practising doctors there.

Sir Allen and Lady Daley made a three-day visit to the northern areas of the State, and saw the medical arrangement there. Whyalla, Iron Knob, Port Augusta, Port Pirie, Clare and Kapunda were visited. Most of the medical men at the towns called at, and also a large number of lay members of the local boards of health, met the visitors.

The Commonwealth Club of Adelaide invited Sir Allen to address one of their lunch-time meetings. About 200 professional and business men of the city were present and the address on " London in the Blitz " was well received.

Although the programme was so full, Sir Allen and his wife were always ready to see it through. His extensive knowledge of the whole range of public health work, coupled with his effective handling of the matter on every occasion, made his address valuable and memorable.

The Nuffield Foundation arranged for Sir Allen Daley to visit Australia.

Health Conference.—A conference of medical officers of health was arranged by the Department of Public Health during the visit of Sir Allen Daley, in February. It was held at the Institute of Medical and Veterinary Science, and its various sessions were attended by between 70 and 90 officers of health and others interested in the subjects under discussion.

It showed true interest for a busy doctor to give up his weekend and some even travelled hundreds of miles at their own expense, to attend.

The organization of the Conference ran upon oiled wheels due to the good will of the many persons whose help was elicited. Amongst them were members of the staff of the Institute, the Adelaide Local Board, Messrs. F. H. Faulding and Co., Ltd., and the ladies who generously and ably conducted the catering arrangements.

All the addresses were of a high standard with a wide range of topics and a modern outlook.

Sir Allen Daley referred in his stimulating address to the question—What is the most useful work that can be carried out by health departments? " The first thing to do " he said " is to assess the health problems of a community according to districts, age and occupation groups, and population densities. The information may be obtained from vital statistics, hospital statistics, infectious diseases returns, industrial records, and other sources. The Health Department should be the co-ordinating agency, keeping close liaison with hospitals, laboratories, and social services. For example, a problem that has been brought to light by study of vital statistics is that the greatest cause of death in children of four years to five years is not of infectious disease but home accidents; surely there is a field for education accident prevention by a health department ".

In the two day conference a wide range of useful work was covered. The milk-testing demonstration and Dr. McCartney's items were well presented and valuable. Papers by Dr. Miles on " Encephalitis ", and by Drs. Beare, Watts, and McQueen, on "Brucellosis, Leptospirosis, and Q Fever ", gave up-to-date information on those matters.

Work of the Health Department was illustrated by Dr. Woodruff's paper and demonstration on tuberculosis control and by Dr. Hustler's commentary on health publicity. The little play, " Dirty Work ", was worth while in showing the way of bringing home to food handlers the importance of cleanliness. Drs. Newland, Jungfer, and Halloran gave a good summary of the wide and varied field of the local medical officer of health's endeavour.

Sir Allen Daley left the firm impression that interest in public health is growing all over the world. It is a field of work on which world progress depends to a greater degree than is commonly realized. Even for those who labour singled-handed in country areas there are opportunities for playing a part in promoting community good health.

National Health Week.—National Health Week, October 23rd to 31st, was opened by the Honourable Sir Alexander Lyell McEwin, Minister of Health, over local and regional broadcasting stations. During the week " scatters " on health matters such as personal hygiene, cleanliness and care in food handling, safety in the home, immunization against diphtheria and whooping cough, and home accidents were broadcast.

Attractive posters in co-operation with the Queensland Health Education Council were distributed to local boards and schools. Another poster " Civic pride begins in your backyard " was printed locally and distributed.

Circular letters were forwarded to local boards to stimulate interest in Health Week. Local boards were exhorted to accentuate some of their usual activities during Health Week, such as disposal of rubbish, fly, rat, and mosquito control, general " clean ups " of their districts, and diphtheria and whooping cough immunization.

Local boards, subsequently asked for their opinion on the value of health weeks, thought they made people more health conscious.

Generally speaking the press co-operated well. Some advertising firms gave their publicity a health motif.

A special pamphlet on the subjects of hygiene for housewives, home safety, and rat control, and waste water disposal was printed and distributed through local boards. It was well received.

Small cards " Wash hands before meals ", were distributed to school children.

A special National Health week issue of *Good Health* was produced. *The Children's Hour*, the monthly school magazine of the Education Department published special health articles. The Junior Red Cross organized a poster competition for school children on the motif " Health and You ". Cash prizes were allotted. The competition met with a gratifying response. It uncovered some original ideas and technical ingenuity possessed by young artists.

The National Safety Council was requested to divert some of their publicity to the prevention of accidents in the home.

Picture slides, " Cleanliness makes food safe ", and " Immunize against Diphtheria, Whooping Cough, and Tetanus", were shown at most metropolitan and country picture theatres throughout Health Week. The policy in South Australia was to concentrate on the conservative aspects of health such as personal and community hygiene and immunization against diphtheria, whooping cough and tetanus. The importance of home accidents as a cause of death and disability were given prominence.

"Good Health ".—Four issues of this magazine were published during the year. Each had an attractive and original cover. The January issue dealt with topical health subjects of interest to the South Australians. The April issue featured the visit of Sir Allan Daley and the 1953 Conference of South Australian Medical Officers of Health.

The July and winter issue stressed that action taken to prevent summer diseases must begin during the winter months. Articles dealt with summer gastroenteritis, food poisoning, control of flies, construction of dairies and clean milk supplies. The October issue included a variety of public health subjects from grease traps and rubbish bins to healthy home lighting and babies with poor hearing.

Newsletters.—Medical Officers' Newsletters sent out during the year dealt with international vaccination certificates, immunization against diphtheria and whooping cough and tetanus, the issue of tetanus immunization certificates, occurrence of typhoid fever, potassium iodide in endemic goitre and organic phosphate insecticides.

Circulars.—Twenty-five official circulars were issued by the Central Board. These referred to the 1953 Conference of Medical Officers of Health, amendments to legislation administered by the Board, 1953 Health Week, special regulations dealing with desiccated coconut, immunization, unauthorized septic tanks sewage disposal installations, articles for " Good Health " and the incidence of endemic goitre in South Australia.

World Health Organization Seminar on Mental Health in Childhood.—Dr. Naomi Ryan, of the School Medical Services attended the seminar on " Mental Health in Childhood ", held at the Sydney University at the end of August. This was the first occasion on which the World Health Organization has held a seminar in the Southern Hemisphere. There was an attendance of 60 doctors and scientists concerned with child health, infant welfare, education, psychology, sociology and anthropology. Representatives were present from Canada, Burma, Formosa, Hong Kong, India, Indonesia, Japan, Malaya, Phillipines, New Guinea, New Zealand, Sarawak, Thailand, United Kingdom, United States of America, and Australian States.

The subject of the seminar " Mental Health in Childhood " was divided into themes :—The Child as an Individual; The Child in relationship to the community ; Behaviour problems in childhood ; Psychological Problems of the handicapped child ; Planning to meet the psychological needs of children.

Dr. Ryan, in her report made these comments :—" The concept of Health as a state of complete physical, mental and social wellbeing, and not merely the absence of disease or infirmity, was accepted. Mental health is an essential component of this concept of total health.

It was stressed that a child should be treated as an individual not merely as a miniature adult. Emotional security requiring intimate relationship with parents or parent substitutes is one of the basic needs of children. Character defects in adults can often be traced back to emotional insecurity in childhood.

" Children can develop more fully when their individual differences in physique, intelligence and temperament at each stage of their development are understood by adults charged with their care and training ".

National Health and Medical Research Council and Committees.—Two meetings of the Council were held. The Chairman of the Central Board of Health was represented by the Senior Medical Officer, Dr. G. H. McQueen, at the meeting at Sydney in May and by Dr. H. F. Hustler at the meeting at Canberra in November.

Public Health Committee.—Two meetings of this Committee were held. The Director-General of Public Health, Dr. A. R. Southwood, attended the meeting at Brisbane in April and Dr. H. F. Hustler attended the meeting at Sydney in November.

Industrial Hygiene Committee.—Two meetings of this Committee were also held. Dr. G. H. McQueen attended the meeting held at Melbourne in December.

Poliomyelitis Committee.—Dr. R. G. Sargent attended the meeting of this committee held during the year in August, at Sydney.

2. LEGISLATION.

The Health Act.—The Health Act Amendment Act of 1953 re-enacted repealed sections of the original Act of 1898 relating to trade nuisances. A local board of health, if it is of the opinion that any place used for any trade or business is or is likely to become injurious to the health of or offensive to any of the inhabitants of the district, or any person employed therein, may institute summary proceedings against the person by or on whose behalf the trade or business is carried on. Any person who keeps any accumulation or deposit of offensive matter longer than in the opinion of the board is necessary for the purpose of any trade or business, or who omits to take the best available means of preventing any such accumulation or deposit being injurious to the public health, shall be guilty of an offence. The above provisions do not apply on any part of the State where the " Noxious Trades Act 1934 " has application.

The provision which requires all houses erected or rebuilt in municipalities to have such drains, means of ventilation and sanitary requirements as the local board may prescribe has been extended to include townships within district council districts as well as in municipalities. These do not apply where the provisions of the Building Act are applicable.

Regulations under the Health Act.—The Health Act Regulations were amended as follows :—

The period of isolation of sufferers from scarlet fever has been reduced. Local boards are now required to cause sufferers from scarlet fever to be isolated and detained in isolation until the officer of health is satisfied that such person is no longer liable to convey infection and in any case for not less than 10 days after the institution of penicillin therapy if negative swabs for group A haemolytic streptococci have been obtained and not less than 14 days where swabs have not been obtained.

Notifications of changes of address by persons suffering from tuberculosis are now required to be notified by the patient direct to the Central Board of Health. This is in line with the amendments to the Health Act requiring medical practitioners to notify cases of the disease direct to the Board.

The powers of the Central Board of Health in regard to persons suffering from pulmonary tuberculosis and who are so helpless or so negligent as to be a danger to the health of others have been deleted from the Regulations. Legislation on this aspect was incorporated in the Health Act by the Amending Act of 1951.

Applicants for licences to carry out fumigation with cyanide or cyanide preparations are now required to satisfy the Central Board of Health that they are medically fit to do so.

The Food and Drugs Act.—The Food and Drugs Act was amended during 1953, to require that persons selling cream shall be licensed and their premises registered.

Regulations under the Food and Drugs Act.—The Food and Drugs Regulations were amended in the following directions :—

The regulation relating to paper for the wrapping of meat, fish or bread was amended to permit the use of new clean unprinted paper which may be coloured with a colouring matter approved by the Central Board. The Board has approved of the colouring safranine T.N.S. for the purpose of this regulation.

The use of salicylic acid as a preservative in non-exisable fermented drinks is now prohibited, though this amendment will not come into force until the 20th August, 1954.

Sales of antibiotic substances by way of wholesale dealing to a manufacturer for use in the production of stock foods, and sales without a prescription of a stock food containing antibiotic substances are permitted provided the preparation is not represented as being for use in the prevention, cure, mitigation, or treatment of disease.

The sale is prohibited of any medicine containing the drug mercurous chloride which in any label or advertisement contains any statement suggesting or indicating that it may be administered to children as a laxative, or soothing preparation or as medicine for use during and after the teething period.

The sale of desiccated coconut is prohibited unless it is sound, wholesome and free from any pathogenic organisms. In particular the sales of desiccated coconut known under the brand of " Tropic Snow " is prohibited unless it has been rendered wholesome to the satisfaction of the Central Board of Health.

Legal Proceedings.—Breaches of the Health Act and Food and Drugs Act were the subject of legal proceedings in 36 cases conducted by the Central Board and other authorities during the year. The cases were :—

Breach of Health or Food and Drugs Act	No.
Sale of milk which did not conform to the standard	15
Food premises not maintained in a clean condition	6
Feeding of uncleansed and uncooked offal to swine	4
Failure to keep food premises free from rats and mice	3
Dogs unchained in slaughtering premises when not being used for yarding purposes	3
Spirits not true to label	2
Offensive slaughterhouse	1
Smoking while engaged in the delivery of food for sale	1
Sausage not conforming to prescribed standard	1
Total	36

3. VITAL STATISTICS

The following preliminary particulars for 1953 have been supplied by the Government Statist and are published subject to slight revision. Particulars for 1952 are in parentheses.

Population.—The estimated mean population for the State for 1953 was 757,600 (739,549).

Births Registered.—The number of births registered was 18,156 (17,884) an increase of 272. In 1935 there were only 8,270 which was the lowest since 1876. From 1936 onwards there has been almost a continuous increase to the record total of 18,156 in 1953. Although the actual number registered was a record the rate per 1,000 of mean population of 23·97 (24·18) was much lower than in the earlier years of the State and it was also lower than the rates in recent years, having fallen from 25·25 in 1947.

Actual Births.—A period of 42 days after birth is permitted for registration and the number of births registered in a year therefore differs from the number of births actually occurring during the year.

The numbers of registered and actual births during recent years have been 1948, 15,870 and 16,091 ; 1949, 16,042 and 16,204 ; 1950, 17,306 and 17,320 ; 1951, 17,463 and 17,138 ; 1952, 17,884 and 17,900.

Sexes of Births.—The number of boys compared with 100 girls born does not vary greatly and in recent years has been:—1949, 105·64 ; 1950, 105·39 ; 1951, 105·45 ; 1952, 104·55, and 1953, 106·11.

Adoptions.—480 (403) children were legally adopted during the year.

Deaths Registered.—6,962 (7,050) a decrease of 88 on the previous year and of 222 on the record total for 1951, the rate being 9·19 (9·53). The 1953 death rate is the lowest since 1937.

Infantile Mortality.—Deaths of children under 1 year were 375 (413). The infantile death rate, or the number of deaths of children under 1 year per 1,000 births during the year of calculation, was 20·65 (23·09). The rate was less than the record low of the previous year. For the Australian States, the only lower rate was that of 20·09 for Victoria in 1950. The S.A. rate is one of the lowest in the world and has shown a remarkable decrease from eighty years ago when it was 150 to the present rate.

There were 106 (122) deaths of children under 1 day, 148 (146) of children from 1 day to 1 month and 121 (145) of those from 1 month but under 1 year. Compared with earlier years there has been a distinct decrease in the death rate of children under 1 month but a far greater decrease in respect to children from 1 month to under 1 year.

Death of infants from certain causes for 1953 (1952) have been :—Diarrhoea 12 (19), Congenital malformations 67 (76), prematurity 79 (107), injury at birth 43 (39), other diseases peculiar to early infancy 82 (58), cerebro-spinal meningitis 5 (2), meningitis 2 (5), whooping cough 1 (3), diphtheria — (—), measles — (—), pneumonia 41 (56), hernia and intestinal obstruction 8 (3), and all other causes 35 (45).

Still Births.—These are not included in either births or deaths and they number 287 (320).

Marriages.—The number of marriages celebrated was 6,149 (6,241) and the rate per 1,000 of population was 8·12 (8·44).

4. INFECTIOUS DISEASES.

Statistics.—Numbers of cases and deaths from infectious diseases reported during 1953 are shown, with those for 1951 and 1952 for comparison.

Disease.	Cases.			Deaths.		
	1951.	1952.	1953.	1951.	1952.	1953.
Brucellosis	—	2	1	—	—	—
Diphtheria	44	23	6	4	—	1
Dysentery—						
(*a*) Amoebic	1	2	3	1	—	—
(*b*) Bacillary	3	106	164	—	2	1
Encephalitis	—	23	23	—	—	4
Endemic Typhus Fever	8	4	3	—	1	—
Erysipelas	39	25	13	—	—	—
Erythema nodosum	—	1	1	—	—	—
Influenza	9	120	383	8	1	3
Measles	4,053	4,702	1,573	5	1	2
Meningococcal infection	12	30	17	1	3	5
Paratyphoid Fever	2	2	—	—	—	—
Poliomyelitis	1,491	709	398	62	12	21
Puerperal Pyrexia	14	7	3	—	—	—
Scarlet Fever	258	197	157	—	—	1
Tuberculosis—						
(*a*) Pulmonary	352	386	362	105	88	44
(*b*) Other forms	24	30	28	15	9	5
Typhoid fever	3	—	11	1	1	—
Whooping cough	275	1,242	279	1	3	2

Diphtheria.—The decrease in the incidence of this disease has continued.

Bacillary Dysentery.—The marked increase in the notifications of this disease is due mainly to notifications received in April and May from Kadina where an outbreak of gastro-enteritis was investigated and found to be Sonne dysentery. It is probable that similar outbreaks of gastro-enteritis in other country towns would be found to be due to some form of bacillary dysentery if similarly bacteriologically investigated.

Encephalitis.—Of the 23 cases of encephalitis reported, 12 were the acute infective form. Others were associated with or were a complication of other infectious diseases, 10 with mumps and one with chickenpox. Eight of the reported cases of acute infective encephalitis were investigated at the Institute of Medical and Veterinary Science. Of these two were mumps meningo-encephalitis. No definite diagnosis was reached on the remaining six.

Sera from those eight were tested for antibodies to Murray Valley encephalitis, lymphocytic choriomeningitis, poliomyelitis and to Port Augusta meningitis. No evidence was obtained that any of these were present. Most sera were also tested for leptospiral agglutinations, but all were negative. There is no evidence that any infection with Murray Valley encephalitis have occurred in South Australia since the late part of the summer 1950-1951.

Tests carried out in the virus laboratory of the same Institute on about 100 pairs of sera from cases of benign lymphocytic meningitis suggests that lymphocytic choriomeningitis is rare or non-existent in this State.

Erythema nodosum.—No evidence of tuberculosis was found in the one case of erythema nodosum reported.

Influenza.—The increase in the incidence of influenza was due mainly to an epidemic which occurred at Port Pirie during October and November. Influenza of a more serious type than usual occurred throughout South Australia during the Spring. Typical cases were investigated serologically through the Institute of Medical and Veterinary Science and found to be type B influenza.

Meningococcal Infections.—These again occurred sporadically throughout the State. In July one case was reported from Mount Gambier. The usual precautions were taken by the local board there to prevent secondary cases and in addition all school contacts were given chemoprophylacticoral doses of sulphonamide.

Typhoid Fever.—Eleven cases of typhoid fever were reported. This is considerably more than in previous years. Two cases occurred in January. One of these was admitted to the Northfield Wards from an overseas ship as suspected poliomyelitis and later diagnosed as typhoid fever. The other was diagnosed clinically. There was a slight rise in the agglutination titre for *S. typhi* but no typhoid organisms were isolated from this patient. No source of infection was found. The next nine cases occurred in two groups; one group of four in July and the other of five in August. *S. typhi* type E, were isolated from two of the first group. The other two of this group were diagnosed clinically and serologically. In the next group *S. typhi* type E_1 were isolated from three and the others were diagnosed clinically and serologically.

Seven of these two groups occurred in the metropolitan area. The others occurred in the country—one at Tanunda and one at Woomera. All were from homes with good to excellent standards of hygiene. The homes in the metropolitan area were connected to the metropolitan water supply and sewerage systems.

Each was an isolated case in the family and in the area. Seven were females and two were males. No source of infection and no carriers were found. No secondary cases occurred.

On close questioning all gave a history of having eaten desiccated coconut which with one exception was or could have been Papuan " Tropic Snow " brand. Numerous samples of desiccated coconut were examined bacteriologically. *S. senftenberg* and *S. amager* were recovered from the majority of those definitely proved to be " Tropic Snow " brand. *S. typhi murium* was recovered from a sample from bulk coconut in use in a baker's shop and claimed to be of Ceylon origin. This was regarded as a local contamination from rats or mice. Bacteriological examinations of other suspected foods were negative for typhoid fever or other salmonella organisms. *S. typhi* were not recovered from any samples of desiccated coconut in South Australia but *S. typhi* type E_1 was recovered in Canberra in August from bulk Papuan desiccated coconut which had been repacked in Sydney. *S. senftenberg* and *S. amager* were isolated from the faeces of a number of patients from widely separated places in South Australia. These patients had signs and symptoms of mild gastro-enteritis. Although not proved the evidence indicated that the source of infection of some or all of the nine reported cases of typhoid fever was Papuan desiccated coconut. Action was taken to prevent the use of contaminated desiccated coconut and no further cases occurred.

Immunization.—Routine diphtheria and whooping cough immunization by local boards continued during the year.

Combined diphtheria and tetanus toxoid (C.D.T.), mixed diphtheria and pertussis antigen, tetanus toxoid, and calflymph for smallpox vaccinations are now available from the Commonwealth Government for the free distribution to local boards of health. These products are valuable additions to those previously available, diphtheria formalized toxoid and pertussis vaccine.

Some local boards have already commenced immunization against tetanus, and more local boards are adopting continuous or monthly clinics for immunization. These methods have many advantages over the annual immunization campaigns. To produce the best results, immunization against whooping cough should be done as early as possible in the first year of life and immunization against diphtheria should be done towards the end of the first year.

Continuous immunization throughout the year is the only way by which all children can be immunized at these ideal ages.

Besides encouraging immunization against diphtheria, whooping cough and tetanus by local boards and private practitioners the Department extended its own immunization operations in the " outback " a stage further. A " follow up " visit was made to places along the Peterborough to Broken Hill railway line. In addition places adjoining the Northern Line railway from Hawker to beyond Marree and also the East-West railway line from Port Augusta to Tarcoola were visited. The Andamooka opal fields and two aboriginal mission stations, Nepabunna and Finniss Springs were also included. This process will be continued next year with the co-operation of the Flying Doctor Service and the resident doctors at Woomera and Leigh Creek. The need for immunization against tetanus was considered of special importance in the far out-back, so a request was made to the Commonwealth Government for the release of the triple antigen against diphtheria, whooping cough and tetanus by the Commonwealth Serum Laboratories. This was supplied and its use has greatly simplified the work in these areas. The children's resentment was much less and there was a considerable saving of time and work.

Officers of the Department immunized 51 children against tetanus 346 children against diphtheria, whooping cough, and tetanus with triple antigen, and 32 children were given " booster " injections for diphtheria and whooping cough in areas outside Local Government control.

5. POLIOMYELITIS.

Statistics.—The epidemic, which began in May, 1949, has continued throughout the year with fluctuations. Figures are as follows :—

Year.	Cases.			Deaths.		
	Total.	Metropolitan Area.	Other Districts.	Total.	Metropolitan Area.	Other Districts.
1949	580	490	90	20	15	5
1950	973	816	157	17	7	10
1951	1,491	1,012	479	62	39	23
1952	709	435	274	12	7	5
1953	398	287	111	21	11	10
Total	4,151	3,040	1,111	132	79	53

Incidence.—Table showing age, incidence, and mortality of the epidemic :—

Age Groups.	Cases.			Deaths.		
	Male.	Female.	Total.	Male.	Female.	Total.
0-4	359	263	622	10	7	17
5-9	593	312	905	8	3	11
10-14	293	215	508	10	6	16
15-19	224	232	456	14	7	21
20-24	187	259	446	13	7	20
25-29	166	251	417	15	12	27
30-34	118	162	280	4	6	10
35-39	93	108	201	4	1	5
40 and over	90	128	218	2	3	5
Unknown	46	52	98	—	—	—
Total	2,169	1,982	4,151	80	52	132

This epidemic has been State wide.

Cases have occurred in sparsely populated areas, in remote parts of the country, and in the far north, e.g. Edeowie (near Hawker), Marree, Lake Eyre, Alice Springs, and at a sheep station near the Broken Hill line. Scattered cases have occurred on Kangaroo Island and Wardang Island.

However, although the epidemic was widespread, 73 per cent of the cases were reported from the metropolitan area where approximately 60 per cent of the State's population live.

The highest incidences occurred in the more thickly populated areas and in the newer housing areas where younger parents and large numbers of children live.

Three Phases.—The epidemic has occurred in three phases. The first ended in October, 1950, a period of 18 months. The second commenced almost immediately, and ended in October, 1952, a period of 24 months. Then followed almost immediately the third but much milder phase.

The first two cases occurred during May, 1949. None were reported in June but the epidemic was well established in July, 1949, when 19 cases were reported. The succeeding months gave concern. The highest peak of the epidemic was reached in the first week in December, 1949, when 56 were reported for the week, and 206 for the month.

There was another sharp rise during the last week in January, 1950, when 54 cases were reported.

The weekly totals then diminished more or less steadily until the end of October, 1950, only 11 cases were notified for that month.

During the first phase 1,460 cases and 35 deaths were reported—a fatality rate of 2·4 per cent.

PHASE I. MONTHLY FIGURES OF CASES AND DEATHS.

1949 Month	Cases	Deaths
May	2	—
June	—	1
July	19	1
August	29	1
September	98	4
October	103	5
November	123	5
December	206	3
1950—		
January	163	3
February	141	2
March	165	1
April	126	3
May	91	1
June	64	2
July	50	—
August	40	1
September	29	2
October	11	—
Total	1,460	35

The second phase commenced immediately. Thirty-five cases were reported in November, 1950, and the incidence increased to 175 for September, 1951. Ten deaths occurred in that month.

The monthly figures then began to fall, more or less regularly to 27 cases in October, 1952, bringing the total for the second phase to 2,205 and 75 deaths, the fatality rate being 3·4 per cent.

PHASE II. MONTHLY FIGURES OF CASES AND DEATHS.

1950 Month	Cases	Deaths
November	35	2
December	58	—
1951		
January	97	1
February	95	6
March	127	4
April	84	6
May	90	1
June	120	1
July	119	7
August	127	8
September	175	10
October	149	6
November	159	8
December	149	4
1952—		
January	85	1
February	101	3
March	140	4
April	57	—
May	57	—
June	26	—
July	41	1
August	66	1
September	21	—
October	27	1
Total	2,205	75

The third phase began in the first week of November, 1952. The peak occurred in mid-February, 1953, with a week's total of 25 cases. Numbers then gradually decreased until December when only six cases were reported.

For the fourteen months of the third phase there were 486 cases with 22 deaths, the case fatality rate being 4·3 per cent, as shown below.:—

PHASE III. MONTHLY FIGURES OF CASES AND DEATHS.

1952— Month	Cases	Deaths
November	41	—
December	47	1
1953—		
January	44	3
February	69	6
March	61	4
April	34	1
May	53	5
June	28	1
July	16	—
August	22	1
September	33	—
October	18	—
November	14	—
December	6	—
Total	486	22

Early Records.—The first recorded death from poliomyelitis in South Australia occurred at Mount Gambier in the year 1895. No details are available.

An epidemic of 14 cases was reported by Dr. C. A. Altmann when practising in Port Lincoln in 1897. This epidemic was described in the Lancet of July, 1897, as a remarkable series of acute poliomyelitis cases.

All except one were over the age of 3 years, whereas most authorities at that time agreed that infantile paralysis usually occurred before that age. Males exceeded females and the epidemic occurred in the hot dry months of March and April. The onset and symptoms of the disease resembled the prodromal symptoms of influenza. Hypersensitivity of muscles preceded paralysis, and temporary loss of bladder function occurred in the early stage as in some of the cases as at the present time.

Poliomyelitis was proclaimed a notifiable infectious disease in South Australia on 23rd February, 1922, and cases have occurred every year, except in 1924. In 1922 a mild epidemic occurred. No deaths were recorded. During 1930 and 1931 there was another epidemic with 38 cases and six deaths.

The 1937-1938 *Epidemic.*—The largest outbreak up to 1948 began in the summer of 1937-1938. The epidemic started in Melbourne in June, 1937, and in September, 1937, the first cases in this State occurred at Ceduna ; one was a child who had recently arrived from Melbourne.

From November, 1937, to June, 1938, inclusive, 341 cases of poliomyelitis were reported to boards of health in South Australia. There were 21 deaths. Of the 341 cases, 232 occurred in the metropolitan area (population 318,190) and 109 in the country (population 272,810), and 283 were admitted to the Northfield Infectious Diseases Hospital for treatment.

Further Epidemics.—In 1940 and 1946 there were also decided increases in the incidences of poliomyelitis.

During 1947-1948, another epidemic occurred.

The age incidence in these differed form previous epidemics. The disease, previously more common in children under 5 years of age, now attacked older people, up to and including middle age. The older age groups were even more affected in the 1947-1948 occurrence.

State Advisory Committee on Poliomyelitis.—This body acts in an advisory capacity to the State Government. The original committee was formed in 1937 and called the Advisory Committee on Infantile Paralysis.

When an extensive outbreak of poliomyelitis occurred in 1946, the Minister of Health set up a special advisory committee to replace the original committee. The basis of this Committee was the already existing Advisory Committee on Health and Medical Services, together with additional members appointed to represent other health institutions especially concerned with poliomyelitis.

Poliomyelitis Medical Officer.—Dr. D. N. Robinson held the part-time position of Poliomyelitis Medical Officer in the Department of Public Health from March, 1951, until he resigned in March, 1952, to take up studies in orthopaedics in England. The vacancy was filled by Dr. R. J. Sargent, late relieving Superintendent at Northfield Infectious Diseases Hospital

The duties of the Poliomyelitis Medical Officer are to :—

(1) Review, annotate and supervise the Department's poliomyelitis card register

(2) Visit the Northfield Wards, the Adelaide Children's Hospital, and the Royal Adelaide Hospital to observe the treatment and progress of patients.

(3) Visit Somerton Crippled Children's Home as well as the Physiotherapy Clinics at Port Adelaide Central Mission, Barmera, Berri and Renmark, Port Pirie, and the Rehabilitation Centres of the Commonwealth Social Services Department in Adelaide and Victor Harbour as occasion requires.

(4) Draft any questionnaires, special reports or other documents as required by the Director-General of Public Health.

(5) Attend meetings of the State Advisory Committee on Poliomyelitis and assist in carrying out the recommendations made.

(6) Make any other relevant enquiries, initiated by himself or on instruction of the Director-General of Public Health.

Physiotherapy.—The treatment of patients who have been discharged from hospital may be continued at the Out-Patients Departments at the Royal Adelaide Hospital and the Adelaide Children's Hospital where physiotherapy is given by both full-time and part-time physiotherapists.

In addition there are two physiotherapists from the Children's Hospital and two from the Royal Adelaide Hospital giving regular treatment under the Itinerant Scheme (mentioned below). Others from the Adelaide Children's Hospital work full time at the Somerton Crippled Children's Home. A well run physiotherapeutic clinic for children, supplied with staff and ambulances from the Adelaide Children's Hospital, has been set up at the Port Adelaide Central Methodist Mission where about 40 patients are being treated.

For the convenience of country patients, and to relieve congestion at treatment centres in the city, physiotherapy centres have been set up in Port Pirie and in the Upper Murray Towns of Waikerie, Berri, and Renmark.

The clinic at Port Pirie is supplied by a visiting physiotherapist from the Royal Adelaide Hospital. At Berri the work is being done by a physiotherapist resident in the district. Patients from Barmera and Loxton attend the Berri centre. Patients at the Renmark and Waikerie centres are attended by the physiotherapist from Berri.

Sufferers from poliomyelitis under the care and help of the Commonwealth Social Services Department are being given physiotherapy at centres situated in Gawler Place, City, and at Mount Breckan, Victor Harbour, respectively. Rehabilitation training is also afforded at both these places. At Victor Harbour the patients are in full-time residence.

Itinerant Service.—Physiotherapy given in the homes, the Itinerant Scheme, originated as a recommendation from the State Advisory Committee on Poliomyelitis in January, 1951, and was put into effect in the early part of that year. The scheme has proved an unqualified success. It has eased congestion at the Northfield and Children's Hospitals and it affords a happier and more contented outlook for the patients themselves during their treatment.

Almoners.—Qualified Almoners are employed at the Royal Adelaide and Children's Hospitals, and also at the Commonwealth Social Services Department. They gave valuable aid in cases where treatment might be lost, limited or discarded altogether because of various home difficulties.

Ambulance Service.—When necessary ambulance transport is provided by the Royal Adelaide Hospital for adults, and by the Children's Hospital for children under 12 years of age to enable them to have physiotherapy and attend for reviews at their respective clinics.

Research.—Research into various aspects of poliomyelitis has been continued during the year at the Adelaide University and the Institute of Medical and Veterinary Science.

Hospitals.—Most patients, except those suitably supervised and nursed at home, have been sent to the Northfield Infectious Diseases Hospital and isolated for a period of three weeks from the onset of the disease. A few have been treated at country hospitals. At the end of the isolation period, children under 12 years are sent to the Adelaide Children's Hospital for routine muscle checks. Depending on the severity and extent of the muscle weakness found they are retained as in or out patients at that institution for further observation and treatment. If living in the metropolitan area, they may be sent to their homes for treatment by visiting physiotherapists.

Children from the country, and the metropolitan area who cannot have suitable treatment at home, go to the Adelaide Children's Hospital or to the Crippled Children's Home at Somerton, where treatment is given by physiotherapists supplied from the staff of the Adelaide Children's Hospital. Adults, if severely afflicted, or if splints and supports are necessary, are usually retained at Northfield Convalescent Wards for longer periods. When they leave Northfield, they are provided with physiotherapy in their own homes if they live in the metropolitan area. When they have improved sufficiently they are required to attend either the Out-patients department or Orthopaedic Out-patients of the Royal Adelaide Hospital for further treatment.

Other adult patients from Northfield, not so seriously affected are discharged after three weeks for treatment at the Physiotherapy Department of the Royal Adelaide Hospital. They are required to report on occasions to the special Poliomyelitis Clinic and its orthopaedic counterpart for necessary supervision.

Some adults who, because of their special qualifications for relief and training, receive benefits from the Commonwealth Social Services Department, are cared for by the two Commonwealth Rehabilitation Centres at Adelaide and Victor Harbour respectively.

Results of the Epidemic.—To ascertain the ultimate results of the epidemic two sets of questionnaires were prepared. The first inquiry form was sent out in April, 1950, the second in November, 1950. The two sets of reports from each of the 502 patients investigated in this way provide valuable data in assessing the general effects of the first phase of of the epidemic.

The classification of severity has been made into five groups, and particulars in age-groupings are set out in the table :—

A. Complete recovery.
B. Recovery, except from slight residual weakness. Almost all in this group are working again in their ordinary occupations. Two or three have changed their occupations, perhaps finding it desirable to do lighter work.
C. Those with definite residual paralysis in static condition.
D. Those at home, many doing light duties, and all under regular treatment. Many of this group are likely to have some persisting paralysis.
E. Those still in hospital. The long stay suggests the likelihood of some residual damage.

Age Grouping.	A.	B.	C.	D.	E.	Totals.
0-4	34	13	1	23	9	80
5-9	49	32	—	26	6	113
10-14	41	13	—	4	2	60
15-19	34	16	1	4	4	59
20-24	22	14	1	5	1	43
25-29	23	18	—	6	2	49
30-34	18	11	1	7	2	39
35-39	8	11	—	—	1	20
40 and over	14	18	—	5	2	39
Total	243	146	4	80	29	502

The significant features appear to be :—

1. The complete recovery of almost one-half of the cases investigated.
2. The complete and near-complete recovery of over three-quarters of the patients.
3. The relatively small number of patients with a final state of paralysis the actual number is uncertain. Those in group " C ", about one-half of group " D ", and perhaps three-quarters of group " E ", a total of 65 may be left with some degree of definite paralysis of muscle groups. Further studies are necessary for accurate assessment here.

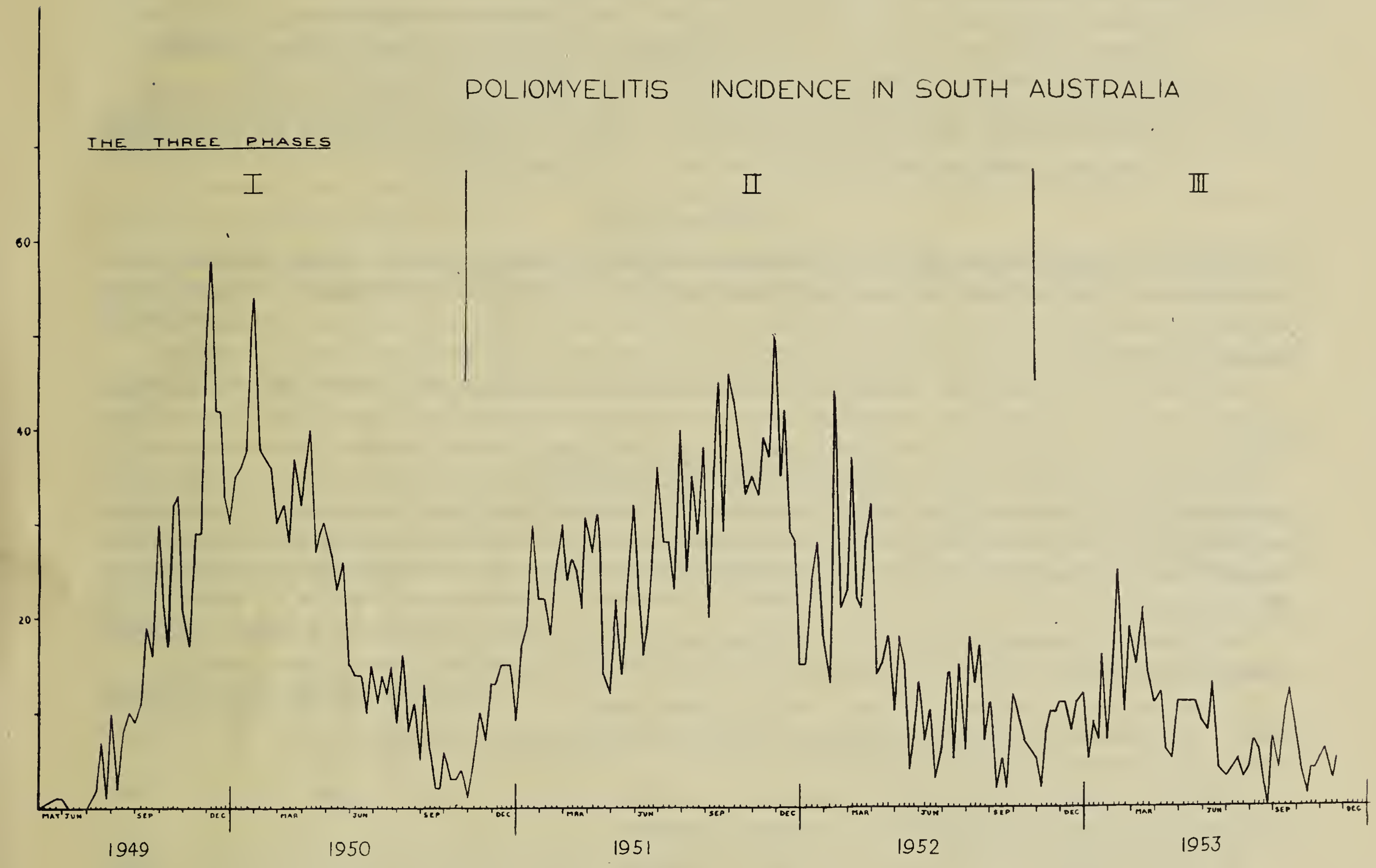
Detailed statistics of the second and third phases of the epidemic are now being worked out. In general, it is likely that all features of the first phase, in the ultimate results, will be reproduced in succeeding phases of the epidemic.

Some observations of the epidemic—

1. Cases of poliomyelitis have occurred in all parts of the State, some in remote and isolated parts, which fact *per se* does not appear either to have placed beyond reach of the epidemic or to have rendered them immune from an attack. It has occurred in many institutions where scholars attend and boarders live, and among inmates of other institutions, but not to any great extent, nor as much as would be expected from the point of view of exposure from contacts. It is noteworthy that only one case has been reported from any goal, and none at all from any mental institution in South Australia since the start of the present epidemic. Only one aboriginal has been reported ; he was a full-blood from Ooldea.

2. The illness in a small proportion of cases reported have been suspected, and in some instances proved, to be due to encephalitis.
3. Some patients affected with severe paralysis during the acute stage of the disease have recovered rapidly and completely.
4. As always, bulbar cases are the most dangerous, and the proportion of deaths is high in this form of the disease. Of the first thousand cases in this epidemic about 550 were atypical. Of the other 450 patients 52 (fifty-two) had bulbar involvement and 25 of these died. Of the 52 patients, 10 were of the ascending type, all died; 18 of the bulbar type, 6 died; 24 of the bulbo-spinal type, 9 died.

   Of the 486 cases reported during the immediate past ten months, the third phase of the epidemic, 22 deaths occurred, 12 of these being bulbar cases. Seven were females and five were males, the ages varying from 7½ months to 49 years. Mostly however, these patients were young children and young adults.
5. High cell counts and high percentage of protein in the cerebrospinal fluid do not necessarily mean a wide nor serious affection of muscles; low percentages in the cerebro-spinal fluid do not necessarily mean that muscles or groups are only slightly affected.



6. Cases have been known to be free of any form of paralysis at the end of the infectious stage of the disease, but especially in children, severe paralysis has developed up to a period of three months afterwards, hence the desirability of watching these patients for some time following discharge from hospital.
7. Children are now attending the Out-patients' Department at the Adelaide Children's Hospital suffering from some form of paralysis, more severely, who have never been reported as suffering from poliomyelitis. It has been ascertained that most of them, when ailing in the first instance, were thought to be suffering from colds or influenza only, and that the usual precautions for suspects suffering from poliomyelitis were, therefore, not observed, nor was the local doctor consulted. The child was presented at the Children's Hospital only when some obvious muscle weakness had already developed. Only a few adults are known to have similar histories. These are the so-called "missed cases". It was pointed out by the then Medical Superintendent of Northfield Infectious Diseases Hospital during the epidemic that atypical cases were being admitted to that institution in whom the features of the disease were insidious onset, frequence of colds before onset, and low cell-count with varying percentage of protein in the cerebro-spinal fluid.
8. It was observed, and perhaps naturally expected, that the largest number of cases in children reported in the metropolitan area were living in the new housing areas such as those in the LeFevre Peninsula, and those between the upper and lower North roads such as Enfield Heights, Blair Athol, Kilburn and others. Some cases have occurred in the various metropolitan migrant camps and hostels, and at Salisbury.
9. The difficulty previously experienced in obtaining splints and the material for their manufacture has been overcome, and very competent splintmakers are now busily employed at the Adelaide Children's Hospital, Royal Adelaide Hospital and Somerton Crippled Children's Home. There is no doubt that orthopaedic surgeons and medical officers in charge of physiotherapy clinics for poliomyelitis cases in Adelaide believe in this form of treatment, especially in the early part of convalescence.

Lessons of the Epidemic.—Through experience gained from this epidemic the following points can be singled out as some to be kept in mind in the future :—

1. Any child complaining of headache, stiff neck, backache, vomiting and sore throat should be kept in bed until medical advice is obtained. Even children with mild symptoms of this nature during an epidemic should be treated similarly.
2. Every patient should be kept under observation for at least three months.
3. It is advisable to isolate other children in the household.
4. The well publicised advice given over past years should be repeated during any epidemic :—
   Avoid fear and panic.
   Avoid becoming tired or even partly exhausted.
   Avoid crowds.
   Avoid all but the most necessary or urgent operations on the upper respiratory passages in children.
5. It is desirable that patients should receive orthodox treatment.
6. Insurance against an attack of poliomyelitis is a wise precaution.
7. A patient can be attacked a second time, even after a short interval of a few months.
8. Adequate physiotherapy staff at hospitals is necessary, but difficult to maintain during an epidemic.
9. Occupational therapy is essential for patients likely to be affected for any length of time.
10. It would be helpful to have in South Australia an organization similar to those existing in the United States of America which could arrange for such necessities as transport, emergency hospitals, physical therapists, nursing services, help in homes, etc., in any future epidemic.

6. TUBERCULOSIS.

Statistics.—Once again there has been a very marked decrease in tuberculosis mortality for the year under review. The tuberculosis death rate (based on preliminary figures which are not yet final) of 6·3 per 100,000 (all forms) and 5·3 per 100,000 (pulmonary) is again the lowest on record for the State and are less than half of the corresponding rates for the previous year.

The mortality curve throughout the century has shown a fairly steady decline until the year 1947, but since then the rates have decreased much more sharply and the curve has become correspondingly steeper. This change in form of the curve strongly suggests that in recent years the attack on tuberculosis is having a significant effect upon mortality.

The number of new cases reported has shown a slight decrease compared with the previous year, and has fallen from 416 to 390. It is, of course, too early to predict whether this decrease indicates that the peak of new cases reported has been passed. The marked rise in numbers of new cases reported in the last five years, together with the fall in mortality, indicates that the load of cases under treatment and supervision is now considerably greater than it was some years ago.

Case-finding.—Compulsory X-ray Surveys of the general population which began in March, 1952, have continued throughout 1953, and a considerably greater number of persons were examined this year.

The country unit, in surveys of Mount Gambier, Murray Bridge, Port Augusta, and Whyalla, examined 23,129 persons. The metropolitan unit covered the populations of three large suburban areas, Thebarton, Norwood, and Hindmarsh, and 41,441 persons were examined.

The number examined in the Adelaide metropolitan area was more than double the number examined in 1952, and country examinations showed an increase of about 15 per cent.

Up to the end of 1953, 103,110 people have been examined and of these 2,226 have shown abnormalities, possibly due to tuberculous infection. Eight hundred and thirty three have shown abnormalities of other kinds. Of the 2,226 whose large films showed shadows which may represent tuberculosis, 70 have been notified as new cases of tuberculosis and 267 were previously known cases.

The follow up of abnormalities discovered in X-ray Surveys continues to be placed in the hands of private practitioners nominated by the individuals concerned. In this way the individuals have the opportunity of discussing with their family doctors the possible significance of what has been found. In almost all cases the necessary further investigations have been carried out in a very thorough manner by the doctors concerned or through the Chest Clinic or public hospitals to which they have referred the patients. The numbers of new cases found continues to represent between 1 in 1,000 and 1 in 1,500 persons examined.

Two special groups whose examination has continued throughout the year are worthy of special mention. All women receiving ante-natal care at the Queen Victoria Maternity Hospital are examined by the Hospital X-ray Department in collaboration with the Department of Public Health and the Chest Clinic, and in this group a new case of tuberculosis has been discovered for each 750 people examined. This work is of the utmost importance as it allows early and thorough treatment and prevents infection in the new-born.

Applicants for employment in the Mines Department continued to be examined in an effort to prevent the entry of tuberculosis into Radium Hill. No case of tuberculosis was reported from that area during the year.

Tuberculosis Allowance.—The certification of eligibility and periodical review of eligibility for Tuberculosis Allowance continues to be a major part of the work of the Tuberculosis Section of the Department. This task has been made easier by the institution of a weekly meeting with the staff of the Chest Clinic and the Sanatorium at which these matters are dealt with.

Epidemiological Surveys.—In association with the scheme of B.C.G. vaccination against tuberculosis, a good deal of information is being acquired concerning the amount of tuberculosis infection in various sections of the population. Nine thousand two hundred and thirty seven persons were examined by the Mantoux test during the year in addition to special groups (contacts, nurses, medical students, etc.,) examined at the Chest Clinic.

The following table shows the main groups examined and the number and percentages who were positive :—

		Number Examined.	Number Positive.	Percentage Positive.
7th grade school children, Adelaide........	Australian-born	3,084	195	6·3
	Migrants	270	85	31·5
Country school children all grades Whyalla and Murray Bridge).	Australian-born	2,281	141	6·2
	Migrants	118	22	18·6
National service trainees (18 year old males)		2,270	363	16·0

It is interesting to note the much lower infection rates in children born in Australia than in migrant children. These groups all showed noticeably fewer positive reactors than similar groups examined in 1952.

Prevention.—As a result of the tuberculin surveys mentioned in the previous paragraph, B.C.G. vaccination was offered to 7,879 persons and 7,851 accepted it.

Complications arising from vaccination were extremely few.

Several children developed small ulcers at the site of vaccination which persisted in one or two instances as long as three months, but all healed with simple treatment. One child was thought to have developed an axillary abscess, but this resolved without active treatment.

Five thousand two hundred and eighteen of the subjects were subsequently tested for Mantoux conversion and only 19 or 0·36 per cent failed to convert.

Overseas Study Leave.—During the year the Director was enabled to spend six months in Britain and Europe on study leave with the assistance of a Wunderly Travelling Scholarship granted by the Royal Australasian College of Physicians.

The period of study was of very great value and has resulted in some alterations in the work of the Tuberculosis Section of the Department which are likely to make its work more effective.

7. SCHOOL MEDICAL SERVICES.

Medical Examinations.—During the year 1953, 18,949 boys and 16,726 girls, a total of 35,675 children were examined. In addition numerous children were examined for deafness in the hearing survey; more than 20,000 children were weighed and measured as part of a Commonwealth-wide survey of heights and weights of school children and many teachers and students were examined in the office in connection with sick leave or before being accepted by the Education Department as future teachers.

The defect notices issued to children are shown below, calculated per 10,000 children examined so as to make possible a comparison with other years.

DEFECT NOTICES ISSUED PER 10,000 CHILDREN EXAMINED.

Year.	Vision.	Hearing.	Nose and Throat.	Teeth.	Heart.
1950	525	147	744	4,102	81
1951	599	202	739	4,784	55
1952	693	200	689	4,439	40
1953	676	168	514	4,466	46

The hearing survey is being continued throughout the State. The following table shows the amount of hearing loss in each ear and includes children sent by their teachers or parents to have their hearing tested because of suspected deafness. Re-tests are not included. The other children examined had no hearing loss.

Pure Tone Audiometer Tests of 35,675 *children.*—No hearing loss 34,155; hearing loss, slight to severe 1,520.

	Right Ear (Hearing Loss in Decibels.)										
Left Ear (Hearing Loss in Decibels).	0-9.	10-19.	20-29.	30-39.	40-49.	50-59.	60-69.	79-70.	80-89.	90 and upwards.	Total.
0-9	68	72	45	7	5	2	1	3	1	1	205
10-19	51	277	144	49	6	5	2	3	—	—	537
20-29	31.	140	153	68	15	2	2	2	3	2	418
30-39	10	35	68	59	15	6	2	1	1	1	198
40-49	3	8	11	20	16	5	1	1	—	1	66
50-59	2	4	4	3	13	4	1	3	—	—	34
60-69	2	5	3	1	8	2	3	3	—	—	27
70-79	2	1	2	—	—	1	4	1	7	—	18
80-89	—	3	—	1	—	1	—	2	2	2	11
90 and upwards	—	—	2	—	1	1	1	—	—	1	6
Total	169	545	432	208	79	29	17	19	14	8	1,520

Although the number of children examined in the metropolitan area is about the same as the number of country children the disproportion between the two still exists for hearing. Between four and five times as many metropolitan children as country children have defective hearing. No reason for this difference has yet been found.

The children with more than 29 decibels loss of hearing in both ears need special help to enable them to keep up with other children. In some cases this can be done by giving the child a seat from which he can hear the teacher more easily but as a rule a hearing aid is required. These are now supplied and serviced, by the Accoustic Laboratory of the Commonwealth Health Department. One hundred and ninety-five such children were examined in schools last year. Most of them are receiving medical treatment, have hearing aids or are on the waiting list for aids. At one time children such as these either received help in Opportunity classes or remained with the other classes, failing occasionally, and being regarded as backward. With modern treatment they can now keep up with the other children.

Survey of Heights and Weights.—The intended survey of heights and weights referred to in the report for 1952 has now been finished. Twenty thousand, eight hundred and fifty two children were done ; there were approximately equal numbers of boys and girls divided fairly evenly between metropolitan and country schools. For comparison, the results of two previous surveys are shown. The increase in both heights and weights is still continuing. It will be interesting to see whether the supply of milk to school children makes any difference but some years should elapse before another survey is made so that the full affect can be seen.

HEIGHTS AND WEIGHTS (1909 FIGURES BY DR. S. ROGERS).

(Height in inches—weight in pounds).

Boys.							Girls.					
1909		1926-45		1953		Years.	1909		1926-45		1953	
Height.	Weight.	Height.	Weight.	Height.	Weight.	Age.	Height.	Weight.	Height.	Weight.	Height.	Weight.
—	—	43·7	42·5	44·4	45·7	5	—	—	43·4	41·9	44·0	44·0
—	—	45·3	46·0	46·7	49·7	6	—	—	45·2	45·3	46·4	48·4
46·0	49·0	47·8	51·0	48·9	54·5	7	45·6	47·9	47·4	50·0	48·1	53·8
48·2	53·2	50·3	56·7	51·0	60·9	8	48·0	52·9	49·4	55·4	50·7	60·1
49·6	57·1	52·1	63·4	53·1	67·2	9	49·5	56·9	51·7	61·0	52·7	66·6
51·7	62·5	53·8	68·3	54·7	72·0	10	51·5	61·8	54·0	67·1	54·8	73·2
53·2	67·1	56·0	74·7	56·7	80·4	11	53·2	68·8	56·1	76·4	57·2	83·3
55·3	75·0	57·8	83·5	58·6	88·5	12	55·6	76·8	57·9	86·4	59·6	94·5
56·8	83·7	60·0	93·3	61·1	99·1	13	57·5	85·6	60·9	97·0	61·5	105·5
59·5	92·4	63·1	107·0	64·0	115·6	14	60·0	94·4	62·0	103·4	62·8	115·1
—	—	65·5	118·1	66·4	128·0	15	—	—	63·7	119·4	63·8	118·2
—	—	66·7	130·6	68·1	138·6	16	—	—	63·8	122·9	65·0	125·0
—	—	68·8	139·7	69·3	146·5	17	—	—	64·7	124·1	65·1	126·8
—	—	—	—	69·7	148·7	18	—	—	—	—	65·3	129·2

WEIGHT PER INCH OF HEIGHT.

Boys.

	5 years.	6 years.	7 years.	8 years.	9 years.	10 years.	11 years.	12 years.	13 years.	14 years.	15 years.	16 years.	17 years.	18 years.
1909..........	—	—	1·06	1·10	1.15	1·21	1·26	1·36	1·47	1·55	—	—	—	—
1926-45	0·97	1·02	1·06	1·13	1·21	1·27	1·33	1·44	1·55	1·69	1·80	1·96	2·03	—
1953..........	1·00	1·06	1·11	1·19	1·27	1·32	1·42	1·51	1·62	1·80	1·92	2·00	2·12	2.13

Girls.

	5 years.	6 years.	7 years.	8 years.	9 years.	10 years.	11 years.	12 years.	13 years.	14 years.	15 years.	16 years.	17 years.	18 years.
1909..........	—	—	1·05	1·10	1·15	1·20	1·29	1·38	1·49	1·57	—	—	—	—
1926-45	0·97	1·00	1·05	1·12	1·18	1·24	1·36	1·50	1·60	1·67	1·80	1·92	1·92	—
1953..........	1·00	1·04	1·11	1·19	1·26	1·33	1·46	1·59	1·71	1·83	1·85	1·92	1·95	1·98

By subdividing this table so as to show, separately, the figures for primary and secondary children and metropolitan and country children, as in the following table it will be noticed that (*a*) country boys, as a rule, are taller than metropolitan ones of the same age, (*b*) metropolitan boys, as a rule, are heavier than country boys of the same age after the age of 9 years and more particularly in secondary schools (*c*) country girls are nearly always taller than corresponding metropolitan girls and very often heavier. Also, in the overlapping ages of 12 and 13, secondary school children are both taller and heavier than those in primary schools.

1953.—BOYS.

Age.	Metropolitan.						Country.					
	Primary.			Secondary.			Primary.			Secondary.		
	Number.	Height.	Weight.	Number.	Height.	Weight.	Number.	Height.	Weight.	Number.	Height.	Weight.
5	496	44·1	45·5	—	—	—	361	45·0	45·8	—	—	—
6	493	46·4	49·1	—	—	—	682	47·0	50·1	—	—	—
7	404	48·7	54·2	—	—	—	509	49·1	54·7	—	—	—
8	465	51·1	61·0	—	—	—	630	50·9	60·7	—	—	—
9	500	53·0	67·2	—	—	—	572	53·1	67·2	—	—	—
10	371	55·0	74·5	—	—	—	537	54·5	70·3	—	—	—
11	384	56·7	81·6	—	—	—	462	56·7	79·5	—	—	—
12	280	57·9	87·2	21	59·5	94·2	402	58·4	87·7	156	60·0	92·1
13	105	60·2	96·0	209	61·4	102·0	151	60·1	96·9	344	61·7	99·2
14	—	—	—	299	63·8	116·8	—	—	—	268	64·2	114·3
15	—	—	—	320	66·4	130·1	—	—	—	138	66·4	123·5
16	—	—	—	237	68·0	139·7	—	—	—	54	68·3	133·8
17	—	—	—	160	69·3	146·5	—	—	—	—	—	—
18	—	—	—	96	69·7	148·7	—	—	—	—	—	—

1953.—GIRLS.

Age.	Metropolitan.						Country.					
	Primary.			Secondary.			Primary.			Secondary.		
	Number.	Height.	Weight.	Number.	Height.	Weight.	Number.	Height.	Weight.	Number.	Height.	Weight.
5	475	43·6	43·6	—	—	—	423	44·5	44·3	—	—	—
6	478	46·3	48·3	—	—	—	670	46·5	48·5	—	—	—
7	424	47·5	53·8	—	—	—	529	48·6	53·9	—	—	—
8	423	50·6	60·2	—	—	—	567	50·8	60·0	—	—	—
9	435	52·6	66·3	—	—	—	514	52·8	67·0	—	—	—
10	399	54·7	73·4	—	—	—	553	54·9	73·1	—	—	—
11	361	57·0	83·0	—	—	—	479	57·4	83·6	—	—	—
12	217	59·0	92·3	125	59·9	98·2	323	59·2	92·6	171	60·7	98·6
13	45	60·3	96·2	411	61·4	105·9	126	60·3	99·2	456	61·9	107·7
14	—	—	—	323	62·4	114·7	—	—	—	337	63·1	115·4
15	—	—	—	333	63·9	118·6	—	—	—	190	63·6	117·7
16	—	—	—	392	65·0	125·1	—	—	—	75	64·4	124·8
17	—	—	—	378	65·1	126·8	—	—	—	37	65·0	126·6
18	—	—	—	172	65·3	129·2	—	—	—	—	—	—

Communicable Diseases.—For comparison, the figures for communicable diseases are shown per 10,000 children attending State schools.

	Diphtheria.	Scarlet Fever.	Measles.	German Measles.	Whooping Cough.	Chicken-Pox.	Mumps.
1948	3·7	11·7	502	2·5	77	151	43
1949	0·8	24·0	346	37·0	85	298	327
1950	1·3	18·3	464	8·5	8	136	216
1951	1·5	16·7	198	80·1	15·6	147	126
1952	0·2	12·4	300	43·9	64·4	305	212
1953	0·2	8·4	95·8	9·9	23·6	225·2	172·7

The actual numbers are shown in the following table :—

	Diphtheria.	Scarlet Fever.	Measles.	German Measles.	Whooping Cough.	Chicken-Pox.	Mumps.	Polio-myelitis.
1948	28	89	3,815	19	583	1,151	331	6
1949	6	180	2,596	277	641	2,385	2,456	147
1950	11	169	4,034	74	70	1,180	1,904	219
1951	14	160	1,880	761	148	1,398	1,198	364
1952	2	128	3,099	452	664	3,144	2,188	123
1953	2	84	958	99	236	2,252	1,727	71

Diphtheria figures continue to remain low. The decline in all the other communicable diseases is evident in the above table. The total for this year is almost one half of those reported by teachers in 1952 the figures being 9,800 in 1952, and 5,429 in 1953. Poliomyelitis is still declining but there were five cases of encephalitis this year ; in some children this occurred as a serious complication of mumps. Meningitis, of different types, fortunately remains very rare ; only three cases were reported. Scabies has almost disappeared, one case being reported, while ringworm has declined from 49 in 1952 to 32 cases in 1953. Conjunctivitis has increased from 13 cases last year to 26 this year but again I have to report that no trachoma has been reported by teachers. South Australia is very fortunate in this respect as it is very common in some of the other States. No tetanus was reported in either 1952 or 1953.

Survey of legs and feet.—In August a survey of children's legs and feet was begun and 11,587 have been examined (6,117 boys and 5,470 girls). Until many more children have been examined in all types of schools all over the State it would not be advisable to attempt to analyse the figures. Where foot surveys have been conducted overseas the published conclusion is that not much can be done to correct foot deformities until there is a plentiful supply of good quality shoes made to fit human feet. The present fashion of having pointed shoes longest in the mid-line is wrong. A visit to the zoo will show that this is the shape of a monkey's foot and not that of a human being.

Staff.—The school population has increased by about one half in the last 10 years without any adequate increase in the medical staff. The supply of dentists has never been sufficient and probably will remain so unless Dental Scholarships are established and the graduated appointed to school dental work. Since almost every child needs treatment every year there would need to be about 20 or 30 dentists to attend to those children who do not visit private dentists. There were three dentists and a senior dentist at the end of 1953 and one of these dentists resigned in January, 1954.

Dental Examinations.—Schools in the Eudunda district, on the west coast and at Quorn were visited by three school dentists. All children whose parents wished them to have treatemnt were made dentally fit and the following work was done :—

Number of children treated :		944	
Extractions—			
Permanent	689		
Deciduous	1,883	2,572	Average per child 2·7
Fillings—			
Permanent	3,839		
Deciduous	685	4,524	Average per child 4·8

From a group of 2,529 children who were examined it was found that 87 per cent were in need of dental treatment.

When visiting country districts and to impress upon the parents the importance of regular dental supervision and treatment the School Dentists gave talks and showed films to the Parents' Associations.

At the Virginia School, where the pupils were treated by a School Dentist in 1952, the topical application of sodium fluoride was carried out, and each child was treated four times at intervals of three to four days. These children will be examined each year to see the progress of dental caries, and further schools will be included in the survey in 1954.

In October the children from the Port Lincoln Primary School were examined again to ascertain the effect of the Uley-Wanilla water on the teeth condition in that district. The number of families who still use rainwater is comparatively very high in spite of the request to parents to use water containing fluorine, but during the past year there has been a slight increase in the number who use exclusively Uley-Wanilla water, and a greater increase in the number who use both rainwater and the water from the local supply, however, it is noteworthy that the increase in the decay incidence during the past twelve months of those children who used only rainwater shows a higher figure than those who used exclusively fluorine water. The comparison indicates a slowing down of the process of decay, which is shown by the number of teeth which must be extracted and cannot be filled. The following records are taken from children in the five to eight year group :—

	1952	1953
Decay incidence :—		
Water containing fluorine	5·5 per child	6·1 per child
Rainwater	7·0 per child	8·49 per child
Extraction incidence :—		
Water containing fluorine	2·3 per child	2·5 per child
Rainwater	2·4 per child	4·0 per child
Use of water containing fluorine :—		
Children using exclusively water containing fluorine	59 out of 791 children = 7·4%	101 out of 889 children = 11·1%
Children using water from local supply *and* rainwater	95 out of 791 children = 12%	203 out of 889 children = 22·8%

In order to have a more accurate survey of the effect of fluorine on the teeth it is advisable to see that all the children in the group to be observed are made dentally fit. This should be done in the Port Lincoln Infant School and at Tumby Bay. In two years' time, after the water has been in use for about five years, a distinct improvement should be noticeable amongst the infant children where the water has been used regularly by the child and also by the mother during pregnancy.

Because of the resignation of one School Dentist the number on the staff is far below requirements, but efforts to obtain additional dental officers have so far been unsuccessful. Requests for visits by School Dentists have been received from a number of country districts, but until the work has been completed on the West Coast it is not possible to send dentists to Kangaroo Island, Yorke Peninsula, the South-East and the River districts.

8. GENERAL SANITATION.

Administration.—Under the Health Act every Local Board is responsible for the proper sanitary condition of its district. Each Local Board is required to appoint an officer of health and such inspectors and officers as may be deemed necessary to the Central Board. All Local Boards have appointed officers of health and health inspectors. The officers of health are all legally qualified medical practitioners but many of the health inspectors have not had training in the theory or practice of hygiene and sanitation. They usually hold a number of other local authority appointments and they often consider their other work more important or more urgent than health inspections. As a result the day to day supervision of the sanitation of many districts is neglected.

In the more closely populated districts it is probable that a lot of sickness can be directly or indirectly attributed to defective sanitation. This view is often expressed by medical practitioners.

The appointment of full-time qualified health inspectors is undoubtedly the best way of providing the constant day to day sanitary supervision necessary in any district. However many sparsely populated districts have not sufficient work to occupy such an officer full-time even if they had sufficient revenue to pay him.

The solution here appears to be the appointment of a qualified health inspector to supervise the sanitation of a sufficient number of districts to occupy the whole of his time.

Groups of local boards have discussed the employemnt of full-time qualified health inspectors but with the exception of a group in the Upper Murray area they have never reached any finality. In the meantime, Town of Mount Gambier, Penola, Tatiara, and Town of Clare local boards gave their health inspectors leave to attend a course of lectures and training in sanitation and inspectors from Mount Gambier and Clare were successful in passing the last examination for the Health Inspectors Certificate of the Royal Sanitary Institute. This is a possible solution of the problem of qualified health inspectors for boards with larger populations and this development has been encouraged. The only solution for boards with smaller populations appears to be some form of grouping.

District Medical Officers.—District medical officers have visited local board areas within their districts during the year and maintained contact with medical officers of health and members of local boards. Most of these visits have been of a routine nature but many have been for a particular purpose or investigation.

The main problems arising in country towns are the elimination of insanitary conditions in premises and the provision of clean food and milk. Sanitation and immunization have reduced the common serious infections to rarities so that now-a-days the rarer diseases are those requiring investigation. An important point is the survival of typhoid fever. Odd isolated cases still occur. Two generations ago there were severe epidemics in certain country areas and probably a few carriers from those still survive. To find them requires detective ability and luck.

Routine Inspections by Inspectors.—Routine inspections were done by inspectors of the Department in 56 local board areas. These inspections provide most of the information regarding the sanitary condition of the State available to the Central Board. They are also the most important means through which the Central Board carries out its supervisory and advisory functions in relation to local boards.

Septic Tanks.—During the year more councils adopted the compulsory installation of septic tanks sewage disposal systems in their districts.

In addition there was an increase in the number of septic tanks installed in other parts of the State. Twelve special visits, each of a week, to local board areas were made by inspectors to assist with the installation of septic tanks and to complete inspections and approvals of these after installation.

These visits were in addition to the usual routine septic tank inspections done at other times.

A Smoke Nuisance.—It is often difficult to decide whether conditions existing on premises constitute a nuisance.

During the year the Department of Public Health was called upon to take action in such a case. Over a period of years complaints had been made by residents of St. Peters local board area concerning smoke and ash coming from fires at a refuse dump situated in the Walkerville local board area. The refuse consisted mainly of waste collected from offices and warehouses. Prevailing winds carried the smoke and ash from the dump into the St. Peters area. The St. Peters Local Board of Health was unable to take any action as the source of the alleged nuisance was not in their area.

A by-law passed in 1936 by the District Council of Walkerville provided that it should not be lawful for any person to burn any paper, rags, and other waste in the open air so as to cause discomfort or inconvenience or endanger the safety of any inhabitant of the district. No action could be taken under this by-law as Walkerville residents were not affected.

Officers of the Department of Public Health investigated the matter and eventually the following charges were laid against the proprietors of the refuse tip :—

(1) For having allowed a place, namely, a rubbish dump, to become in such a state as to be a nuisance, or injurious to health, or offensive, contrary to the provisions of Section 83(1)(g) of the Health Act.

(2) For being the occupiers of a place which was in such a state as to be a nuisance, or injurious to public health or offensive contrary to the provisions of Section 83(2) of the Health Act.

(3) For being the owners and occupiers of premises, not being a private dwelling house, namely, a rubbish dump, within the Municipality of Walkerville, from which premises smoke, dust or fumes or gases were sent forth in such quantity as to be a nuisance, contrary to the provisions of Section 540a(1) of the Local Government Act.

The defendants pleaded not guilty but were convicted on all charges. On the first two charges there was a conviction without penalty, whilst on the third each of the three defendants were fined £1 with £12 4s. 6d. costs, making a total of £3 fines with £36 13s. 6d. costs.

Important evidence for the prosecution was given by the residents of St. Peters who kept day to day written notes of the amount of ash or smoke affecting their premises. This evidence was supported by that of the inspectors of the Department of Public Health.

The Magistrate found that " the presence of smoke and ash in and about their houses was such as to constitute a real and substantial interference with the comfort and convenience of persons of reasonable and average tolerance and to be offensive to them ".

There was insufficient evidence to establish that the conditions were injurious to health.

Dysentery outbreak at Kadina.—In April, 1953, it was reported that an outbreak of severe gastro-enteritis had taken place at Kadina.

An investigation by officers of the Department and the Institute of Medical and Veterinary Science showed that the outbreak was due to *Shigella sonnei*, the organism which is the usual cause of bacillary dysentry in the southern part of Australia. Cultures of this organism were obtained from almost all of the faecal specimens collected from patients.

Investigations showed that most of the cases came from the portions of the town where primitive pan privies were in use. Actual transference of infection to food and drink was probably both by hands and flies. The modern parts of the town where septic tanks are used were free of cases. No evidence was found to support a local suggestion that the outbreak was associated with a mouse plague in the town, nor that the local horse stables had any other influence than in increasing the fly population.

The conclusion is that the prevention of such outbreaks consists in bringing the sanitary installations of country towns up to modern standards.

The organism recovered was tested, as is the practice of the Institute for sensitivity to drugs and antibiotics. It was sensitive to chloromycetin, streptomycin, weakly sensitive to terramycin, and aureomycin and insensitive to penicillin. The information was transmitted to the local doctors for their assistance in treating cases.

The reports of special inspections of the sanitation of Kadina by health inspectors of the Department of Public Health were forwarded to the local Board for action. These reports indicated that further outbreaks could be expected unless the sanitation was greatly improved.

9. FOOD AND DRUGS.

Testing of Samples.—The following table shows the results of samples of foods and drugs submitted to the Government Analyst for analyses.

RESULTS OF ANALYSES OF FOODS AND DRUGS FOR 1953.

Article.	Number Submitted.	Not to Standard or Incorrectly Labelled.
Aerated waters	14	11
Apple tart	1	1
Baking powder	1	1
Bread	2	—
Buttafluff	1	—
Butter Concentrate	2	—
" Butter Queen "	1	—
Coconut (desiccated)	21	9
Coffee and Chicory	7	3
Condensed Milk	5	—
Cream	2	—
Edible Fats and Oils	19	7
Essences	2	2
Fish	5	3
Flour	18	6
Gin	2	—
Ice block crystals	1	—
Lipstick	7	—
Margarine	2	2
Meats	37	17
Milk	1,278	52
Powdered milk	3	—
Sweets	1	—
Tea	1	—
Tinned peas	5	—
Tomato products	12	9
Vinegar	4	3
Vitamin preparations	3	3

Solids not fat content of cows's milk.—A conference of persons interested in the solids not fat content of milk was called in August by the Minister of Agriculture. The Senior Medical Officer and the Senior Inspector of the Department of Public Health were invited to attend. Dr. G. H. McQueen was one of a committee formed from those who attended the Conference to investigate the position regarding the solids not fat content in cows' milk in South Australia.

Evidence produced to the Committee indicated that :—

(*a*) some cows produced substandard milk during certain times of the year ;

(*b*) the solids not fat content of bulk milk from treatment plants in Adelaide has been at certain times of the year below standard ;

(*c*) this substandard milk still contains valuable nutrients ;

(*d*) there are periods, when there would be insufficient milk to meet the demands of the metropolitan area if this substandard milk was not used.

The Committee considered that action was desirable to enable this substandard milk to be sold and in the meantime every possible attempt should be made to eliminate the animals and conditions that are responsible for milk deficient in nutrients.

Dangerous Drvgs :—

Heroin.—The question of prohibiting the use of heroin was discussed with the other States of the Commonwealth ; it was agreed that the drug was not essential in medical practice.

The importation of the drug has been prohibited and when existing stocks are used, its possession and sale will be prohibited.

Mercurial Teething Powders.—Following reports that the continued use of teething powders containing calomel has caused mercury nephrosis and had been an indirect cause of death in young children, the sale of such powders was prohibited. Calomel has now been omitted from the formula of some such powders.

Meat content of processed meats.—A sub-committee of the Advisory Committee examined this matter and the Advisory Committee has now recommended standards which is anticipated will come into force during 1954.

Food colours.—The question of a revised list of permitted food colours, has been under discussion and the recomendations of an expert sub-committee of the Public Health Committee of the National Health and Medical Research Council are at present being discussed with trade organizations.

Thallium Salts.—The sale of thallium compounds was further restricted ; they may now only be sold under a permit system similar to that applying in the case of cyanides and sodium-fluoroacetate.

Medicine Sellers Permits.—Provision was made for the issue of these permits in towns where only a part-time pharmacy operated.

10. INDUSTRIAL HYGIENE.

Problems relating to industrial hygiene referred to the Department of Public Health have been investigated and reports and recommendations made on how to deal with them made.

Lead poisoning.—A case of lead poisoning reported to the Department was investigated. The patient was one of a number of painters who had been removing red lead paint from the outside of large iron containers by means of electric buffing machines. The containers were situated inside a poorly ventilated room and no steps had been taken to remove the dust produced. At the time of the inspection the work had been completed and no further similar work was contemplated for some months. It was recommended that in future the paint should be removed in the open and that each operator should wear a respirator.

Mercury poisoning.—A person employed in a factory where grain was treated to prevent " rust " developed mild symptoms of mercury poisoning. On investigation, " Ceresan ", an organic mercury compound had been used to treat the grain. An exhaust system had been in use but the amount of Ceresan powder on the machine and on the floor indicated that the system had not been efficient. Other employees who had worked with the patient had no clinical evidence of mercury dermatitis or mercury poisoning.

Mines Department Employees.—Pre-employment and annual periodic medical examinations of persons employed on the State's uranium projects were continued. During the year 358 examinations were done. These include a clinical examination, a chest X-ray, and a complete blood examination. If indicated other special investigations are included. With the exception of one employee who developed dermatitis no significant changes have been revealed by any of the subsequent annual periodic examinations. Recommendations have been made that the extent of the hazard involved should be determined by radiation monitoring and estimations of the uranium content of air and these results checked by estimations of the radon content of the breath and the uranium content of the urine of exposed employees.

Medical examinations of public servants.—Medical examinations for superannuation and entrance to the Public Service were continued during the year by medical officers of the Department.

11. SUMMARY AND COMMENTS.

Outstanding features.—The year's work has been more that of consolidation of advances made in previous years than new developments. Routine work in each field of activity has been carried out and in some cases increased because of additional facilities and better arrangement of programmes. Many staff changes have occurred but these are to be expected as a result of staff increases in previous years.

Outstanding features of the year's work were the visit of Sir Allen Daley and the Medical Officers of Health Conference.

Health Education.—Official circulars, newsletters, pamphlets, and discussions with local board members, medical officers and health inspectors are methods used to disseminate health information. In addition *Good Health*, a small magazine containing articles and information of a popular nature dealing particularly with health in South Australia is published quarterly by the Department.

During National Health Week in conjunction with the Commonwealth and other States a special effort is made to draw the attention of people to the advantages of good health and how to attain it. Though the field covered by these methods is extensive it is hoped to extend it further by directing more attention to the children in the community.

Statistics.—Vital statistics give an indication of the health of a community. The population of South Australia has continued to increase. The death rate has remained fairly constant. The birth rate has fallen slightly but the infant mortality rate, the number of deaths among infants under one year per 1,000 live births, has continued to fall and it is now among the lowest in the world.

The incidence of diphtheria and the number of deaths from tuberculosis have shown striking falls over the last few years. These statistics indicate a steady improvement in the health of South Australians. However the incidence of dysentery, influenza, measles and poliomyelitis, remains high. The incidence of dysentery being an indication of the standard of sanitation in a community shows that there is still room for considerable improvement here. The installation of water carriage systems of sewage disposal in country towns would probably result in a spectacular fall in the incidence of dysentery and similar gastro-intestinal infections. The other diseases mentioned are spread mainly by infected droplets from the noses and throats of infected persons during close contact. Their control is made increasingly difficult by the modern trend in Australia for people to crowd together in capital cities. Statistics of illnesses, other than notifiable diseases, are either not available or difficult to get. If obtainable they would indicate to Health Departments the major causes of ill health and assist in formulating a policy for disease prevention.

Infectious Diseases.—The most interesting feature here was the increased incidence of typhoid. This was probably due to the contamination of desiccated coconut with typhoid organisms during preparation in New Guinea. Some of these organisms apparently survived long enough to infect people who ate the raw desiccated coconut in South Australia. The constant supervision of food, particularly if it is not cooked or treated to destroy organisms before it is eaten is necessary to avoid outbreaks of typhoid and other diseases caused by contaminated food.

Poliomyelitis.—The incidence of this disease is the lowest since 1948 and the epidemic of the last three years appears to be dying out. The results of intense research in all parts of the world indicate that a vaccine will be available for the prevention of this disease in the reasonably near future. Plans are already being made for extensive field trials in America with a vaccine made from inactivated virus material.

This is a pleasing change from the pessimistic view previously held regarding the production of an effective poliomyelitis vaccine.

Health in Schools.—The work of the school medical and dental officers has continued. More could be done if more staff were available. It is interesting to note progress made over a number of years. The average South Australian boy of 14 years in 1953 was 4½in. taller and 23lb. heavier than the average boy of 14 years in 1909.

The average South Australian girl of 13 years in 1953 was 3in. taller and 20lb. heavier than the average 13 year old girl in 1909.

Sanitation.—The need for better day to day routine supervision of the sanitation of most parts of the State has been stressed by officers of the Department. This supervision could be done more effectively by the employment of full-time qualified health inspectors by local boards or groups of local boards. Better disposal of refuse and nightsoil, the control of flies and mosquitoes and stricter supervision of food and food handlers are all necessary and would occupy a large part of the time of such an inspector.

Assistance received.—The Department of Public Health and the Central Board of Health again express their appreciation to other Departments both Commonwealth and State, organizations, and to many people for help received during the year.

G. H. McQUEEN, Acting Chairman.

J. B. CLELAND }
A. R. BURNELL } Members
A. BERTRAM COX }

H. T. HUTCHINS, Secretary,
Adelaide, June, 1954.